

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/JP2004/019186

## A. CLASSIFICATION OF SUBJECT MATTER

Int.Cl<sup>7</sup> C07D301/28, 303/27, C08G59/04, 59/50, C08J5/24//C08L63/00

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

Int.Cl<sup>7</sup> C07D301/00-301/28, 303/00-303/27, C08G59/00-59/50,  
08J5/00-5/24, C08L63/00

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Jitsuyo Shinan Koho	1922-1996	Jitsuyo Shinan Toroku Koho	1996-2005
Kokai Jitsuyo Shinan Koho	1971-2005	Toroku Jitsuyo Shinan Koho	1994-2005

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CAPLUS (STN), REGISTRY (STN), WPI (DIALOG)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X Y	JP 7-508797 A (Europäische Wirtschaftsgemeinschaft), 28 September, 1995 (28.09.95), Full text & WO 95/07308 A1 & LU 88405 A & EP 667876 A1 & US 5569727 A	1-3, 5, 7 4, 6, 8
Y	JP 8-277247 A (Merck Patent GmbH.), 22 October, 1996 (22.10.96), Claims; examples & GB 2299333 A & US 5750051 A	1-8
Y	JP 9-118673 A (Cornell Research Foundation, Inc.), 06 May, 1997 (06.05.97), Full text & US 5811504 A	1-8

☒ Further documents are listed in the continuation of Box C.☐ See patent family annex.

\* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search  
04 March, 2005 (04.03.05)Date of mailing of the international search report  
22 March, 2005 (22.03.05)Name and mailing address of the ISA/  
Japanese Patent Office

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## C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	JP 7-258638 A (Merck Patent GmbH.), 09 October, 1995 (09.10.95), Full text & DE 19504224 A1 & US 5560864 A	1-8
Y	WATSON, M.J. et al., A phenomenological approach to the inversion of the helical twist sense in the chiral nematic phase.J.Mater.Chem., 1998, 8(9), pages 1963 to 1969, particularly, Introduction, Experimental, Conclusions	1-8
Y	JP 7-15620 A (Mitsubishi Electric Corp.), 20 June, 1995 (20.06.95), Full text (Family: none)	5-8
Y	JP 7-316526 A (Gould Electronics Inc.), 05 December, 1995 (05.12.95), Full text & EP 676435 A1 & US 5525433 A & US 5629098 A & CN 1115329 A	5-8
P,X	JP 2005-29788 A (Sumitomo Chemical Co., Ltd.), 03 February, 2005 (03.02.05), & WO 2004/113327 A1	1-8

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## Concerning claims 1-8

As to the compounds represented by the general formula (1) set forth in claim 1, it is disclosed that  $Q^1$  and  $Q^2$  are each alkylene of 1 to 9 carbon atoms and oxygen or substituted amino may be inserted between methylene groups constituting the alkylene.

Owing to this disclosure, however,  $Q^1$  and  $Q^2$  include remarkably many groups, so that a group of compounds represented by the general formula (1) does not have such a common chemical structure that a person skilled in the art can grasp the group of compounds as one organized inventive concept. Thus, the group of compounds is unclear. Further, only compounds wherein  $Q^1$  and  $Q^2$  are each methylene are specifically produced in the description. Such being the case, it can not be said that the description and the claim disclose the inventions of these claims in a manner sufficiently clear and complete for the inventions to be carried out by a person skilled in the art. Further, the inventions of the claims are unclear, so that it cannot be said that the inventions are fully supported by the description (PCT Articles 5 and 6).

Since the present invention is thus inadequately disclosed, in this international search report, prior art search has been made only in the rational scope judged from the disclosure of the description.